REMARKS

The Examiner's Action mailed on October 7, 2005, has been received and its contents carefully considered.

In this Amendment, Applicants have amended claim 1. Claim 1 is the independent claim. Claims 1-12 remain pending in the application. For at least the following reasons, it is submitted that this application is in condition for allowance.

The Examiner has rejected claims 1-4, 6, 7 and 10 as being anticipated by *Burgin et al* (USP 5,947,027). It is submitted that these claims are patentably distinguishable over the cited reference for at least the following reasons.

Applicants' claim 1 is directed to a parallelism adjustment device applicable to nano-imprint lithography. The device includes an imprint unit having a first molding plate and an imprint mold mounted on the first molding plate. A carrier unit is provided, which has a second molding plate and a substrate mounted on the second molding plate. A moldable layer is coated on the substrate. A parallelism adjustment mechanism is provided, which comprises a hermetically enclosed resilient film and a predetermined amount of fluid filled therein.

Applicants' claimed parallelism adjustment mechanism overcomes the disadvantages associated with the prior art. For example, Applicants' specification reveals, on page 3, that it is known, from US Patent 6,482,742, to provide charging of a pressure chamber through an inlet, in order to achieve an imprint process using fluid pressure. Thereafter, the fluid is drained through an

outlet. However, as revealed by Applicants' specification, the sealing and imprinting of this apparatus are complex and time-consuming, which is unfavorable to efficient mass production.

Applicants' specification also reveals, on page 4, that it is known, from PCT patent WO 0142858, to mount a pressure chamber under a substrate. A resilient film is established between the pressure chamber and the substrate. A highly pressurized liquid is then charged in the pressure chamber to perform the imprint process. However, as revealed by Applicants' specification, this method is complex and requires the generation of high pressure, which consumes a lot of energy and may cause environmental pollution.

Therefore, there was a need for a parallelism adjustment device suitable for nano-imprint lithography that provided reduced manufacturing and assembly errors, uniformity of imprint pressure, and improved nano-imprint quality. Furthermore, the parallelism adjustment device should have a simple construction that could respond quickly and easily, and that could be manufactured and operated at low cost. Applicants' claimed invention achieved these objectives through the application of a hermetically enclosed resilient film having the fluid therein.

Burgin et al disclose a printing apparatus (110) comprising a pressure chamber (122). Within the pressure chamber there are provided a printing stamp (100) having a support structure (102) and a stamping surface (105). A platform structure (126), and an elastomeric membrane (112) are outfitted on the top of the

platform structure. The pressure on the bottom of the membrane is controlled by a needle valve open to atmosphere (col. 4. lines 48-50). A substrate (124) is placed on the membrane. Thus, this membrane (112) is not hermetically enclosed, as recited by claim 1.

Instead, when performing a stamping process according to *Burgin et al.*, the pressure within the pressure chamber (122) is first reduced. Then, the platform structure (126) is raised to bring the surface of the substrate (124) resting on the membrane (112) into close proximity to the stamping surface (105) of the stamp (100). After that, the membrane (112) is inflated to bring the surfaces of the substrate into physical contact with the stamping surface (105) (col. 7, lines 5-21). This configuration is thus similar to the prior art discussed in Applicants' specification, and thus does not enjoy the advantages associated with Applicants' claimed invention, which are due to the hermetically enclosed resilient film and the predetermined amount of fluid filled therein.

Thus, whereas the structure of the parallelism adjustment mechanism and the driving system according to the present invention is simple and therefore low in cost, the driving system and the membrane system according to *Burgin et al.* are complicated.

Furthermore, another advantage of the present invention is that the stamping pressure applied by the driving source toward the substrate can be increased as long as the resilient film can withstand the exerted pressure. However, according to *Burgin et al.*, the stamping pressure applied by the

membrane is impossible to be higher than a difference between the decreased pressure within the chamber and the pressure of atmosphere.

Since the cited prior art does not teach or suggest Applicants' claimed parallelism adjustment mechanism having a hermetically enclosed resilient film and a predetermined amount of fluid filled therein, it is respectfully submitted that claim 1 and the claims dependent therefrom are patentable over the cited prior art. It is thus requested that these rejections be withdrawn, and that these claims be allowed.

The Examiner has rejected claim 5 in view of *Burgin et al.* arid *Gutowski et al.* (USP 5,648,109); claim 9 in view of *Burgin et al.* and *Gorczyca et al.* (USP 6,787,071); and claims 11 and 12 in view of *Burgin et al.* and *PCT WO 01/42858.* However, none of these secondary references overcome the above-noted deficiencies of *Burgin et al.,* so that these dependent claims are submitted to be patentable over the cited references for at least the same reasons as independent claim 1. It is thus requested that these claims all be allowed, and that these rejections be withdrawn.

It is submitted that this Application is now in condition for allowance. Such action and the passing of this case to issue are requested.

Should the Examiner feel that a conference would help to expedite the prosecution of this application, the Examiner is hereby invited to contact the undersigned counsel to arrange for such an interview.

Should the remittance be accidentally missing or insufficient, the Commissioner is hereby authorized to charge the fee to our Deposit Account No. 18-0002, and advise us accordingly.

Respectfully submitted,

February 7, 2006
Date

Robert H. Berdo, Jr. – Registration No. 38,075
RABIN & BERDO, PC – Customer No. 23995
Facsimile: 202-408-0924; 202-408-5297
Telephone: 202-371-8976

RHB/vm